

# MARICOPA REGIONAL HOUSEHOLD TRAVEL SURVEY

## *Executive Summary*



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## EXECUTIVE SUMMARY

This report documents the design, implementation, and results of the Maricopa Regional Household Travel Survey, conducted by NuStats from February through December 2001. The study was conducted under the auspices of the Maricopa Association of Governments (MAG).

The purpose of this household travel survey was to obtain travel behavior data that would be used to develop and calibrate travel forecasting and air quality models. Of particular interest was updated information that would determine vehicle occupancy, trip generation, trip distribution, and mode choice. The resultant data set will be used by MAG to update its existing models and will serve as the foundation for an entirely new generation of travel demand models.

The Maricopa Regional Household Travel Survey sampled 4,018 households in Maricopa County and a small portion of Pinal County, defined as the city of Apache Junction. Like all recent household travel surveys, the Maricopa Regional Household Travel Study relied on the willingness of area residents to complete travel logs for a 48-hour period. It was based on telephone interviews of randomly selected households from the study area. Household recruitment for the study was conducted through the use of a "recruitment interview", in which respondents were informed of the survey, its purpose, and the obligation of all household members to complete the survey. Data on the household and household members were also collected during the recruitment interview. Participating households were assigned a specific "travel period" or 48-hour period during which to record their travel and activities. This travel day typically took place 7 to 10 days after the recruitment interview. Collection of the travel information was done through the use of a "retrieval interview."

Data collection was guided by sampling goals that focused on the geographic location of households (census designated places) and the number of household vehicles available. The resultant data set contains weekday and weekend travel and activity information for 4,018 households. The participating households were comprised of 10,303 persons and had 6,589 vehicles available to them. They reported making 58,484 trips. Unless noted, summaries of travel data are for all seven days of the week.

Comparison of survey results to previous surveys should be performed with caution. This survey used different methodology than previous surveys. These differences included; collecting travel data on weekends, for children under five, and for two days.

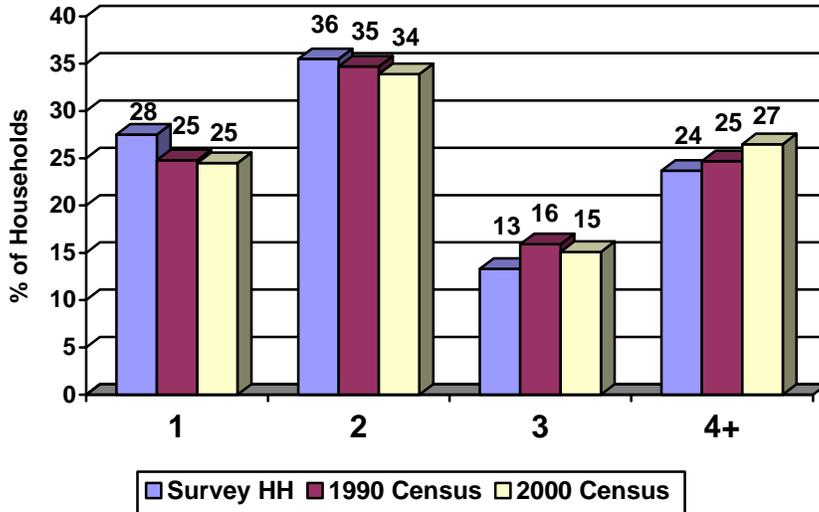
According to a special 1995 Census conducted in Maricopa County, there were 957,750 households in the study area. This means that each participating household represented 238 households in the region, when expanded. Given the timing of the completion of the study and the release of the Census 2000 data, this report contains results weighted to population parameters obtained during the 1995 Census. (All data in this report are so weighted, except when otherwise noted). As indicated in the following section of this executive summary, there was little change in Maricopa County between 1995 and 2000, particularly in the distribution of key modeling variables.

**Comparison of Participating Households to Survey Universe.** The following figures show the distribution of participating households as compared to the 1990 and 2000 Census distributions for Maricopa County. As illustrated the survey distributions are consistent with Census distributions.

In Figure ES-1, the proportion of participating survey households by household size mirrors that of the census fairly closely. This is encouraging because household travel surveys are known

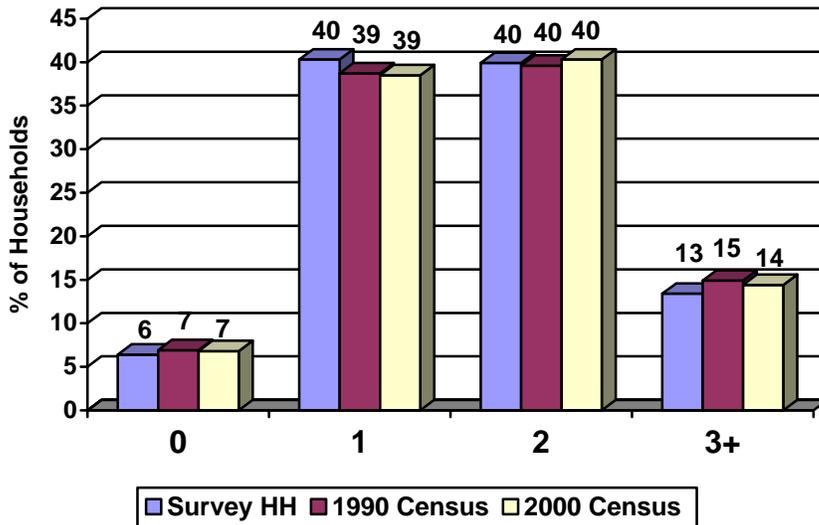
to under-represent larger households, which is not the case with this survey data. There was little change between the 1990 census and the 2000 census with regard to household size.

**Figure ES-1  
Household Size Comparisons**



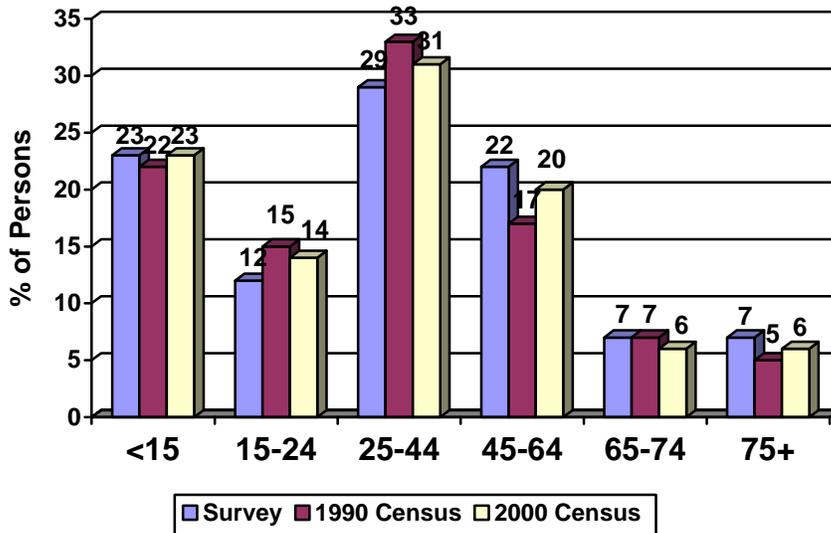
A focus on zero-vehicle households during data collection for the survey ensured that the household vehicle distribution for the survey data was consistent with that of 1990 and 2000 census.

**Figure ES-2  
Household Vehicle Availability Comparisons**



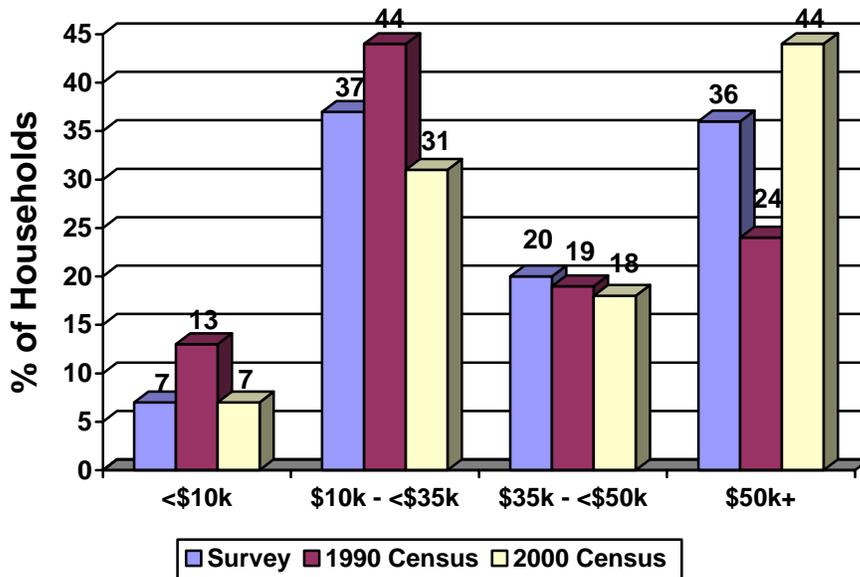
Some recent household travel surveys have noted an under representation of household members in their late teens and early 20's. Unlike other recent household travel surveys, the proportion of participating household members by age tracked that of the 2000 Census.

**Figure ES-3  
Age Comparisons**



In terms of household income, there were some significant changes between the 1990 and the 2000 census. However, the survey data distribution matches that of the 2000 Census fairly well.

**Figure ES-4  
Household Income Comparisons**



**Comparison of Participating Households to Census Journey to Work Data.** The survey was conducted soon after the Census 2000. As shown in Figures ES-5 to ES-7 and Table ES-1, the survey data is comparable to the travel behavior captured by the Census 2000 long form. In Figure ES-5, the distribution of workers by gender tracks equally among all three data sources.

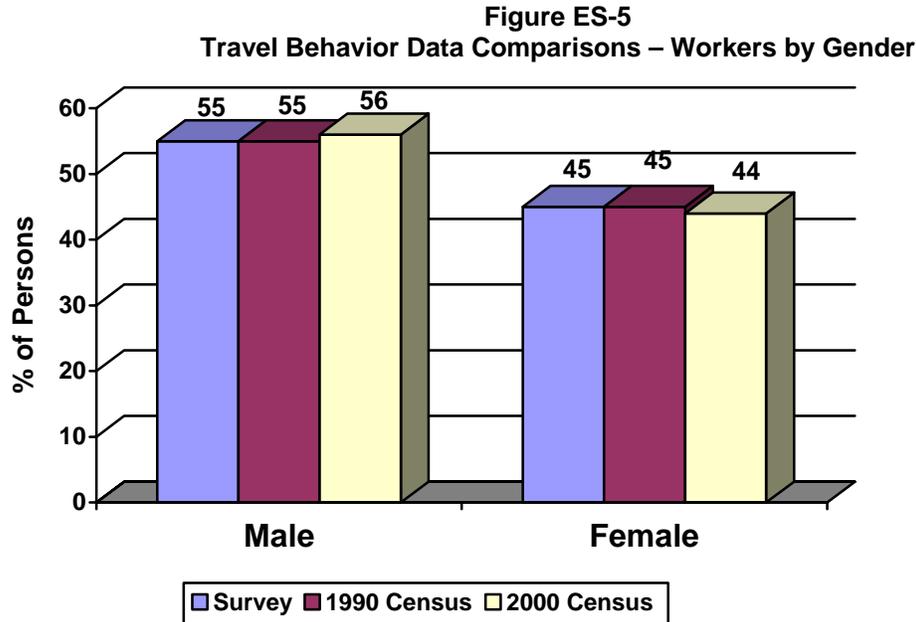


Table ES-1 compares the reported means of transportation to work. The proportion of auto commuters is slightly higher than that reported by the census, while the number of reported telecommuters is about half that reported in the 2000 census. There is an important difference between the two surveys. The MAG Survey respondents recorded their home-based work trips for their survey travel days, while the census records how the person usually got to work the previous day.

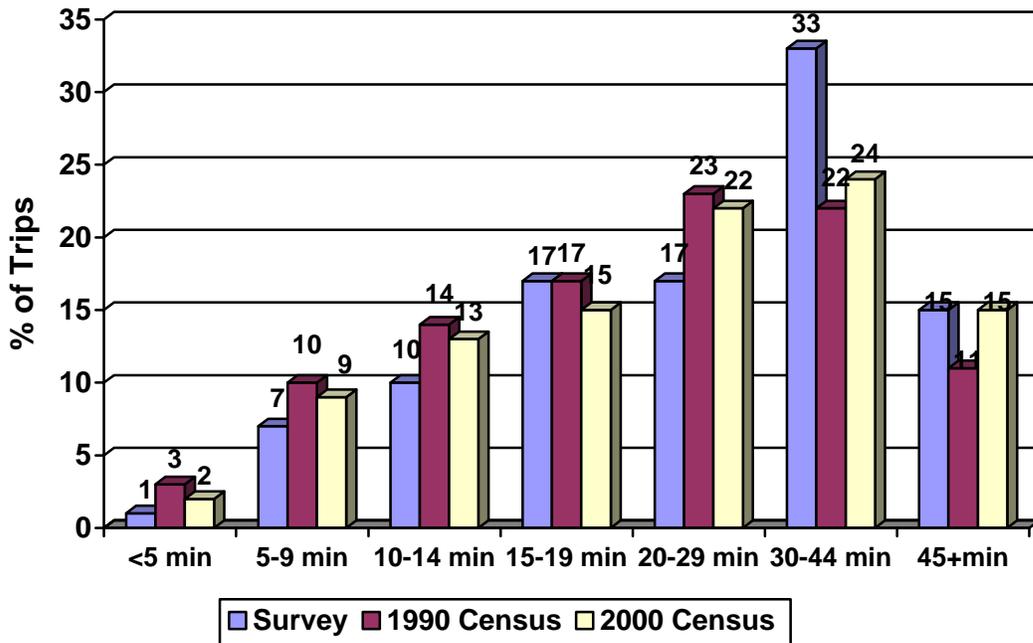
**Table ES-1**  
**Travel Behavior Data Comparisons – Means of Transportation to Work**

<b>Mode</b>	<b>Survey Data</b>	<b>1990 Census</b>	<b>2000 Census</b>
Auto (drive alone or carpool)	92%	89%	90%
Public Transportation	2%	2%	2%
Bicycle or walked	3%	4%	3%
Motorcycle/other	1%	2%	1%
Worked at home	2%	3%	4%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Base: All employed household survey members age 16+, 1990 and 2000 Census data from CTPP table 1 for Maricopa County.

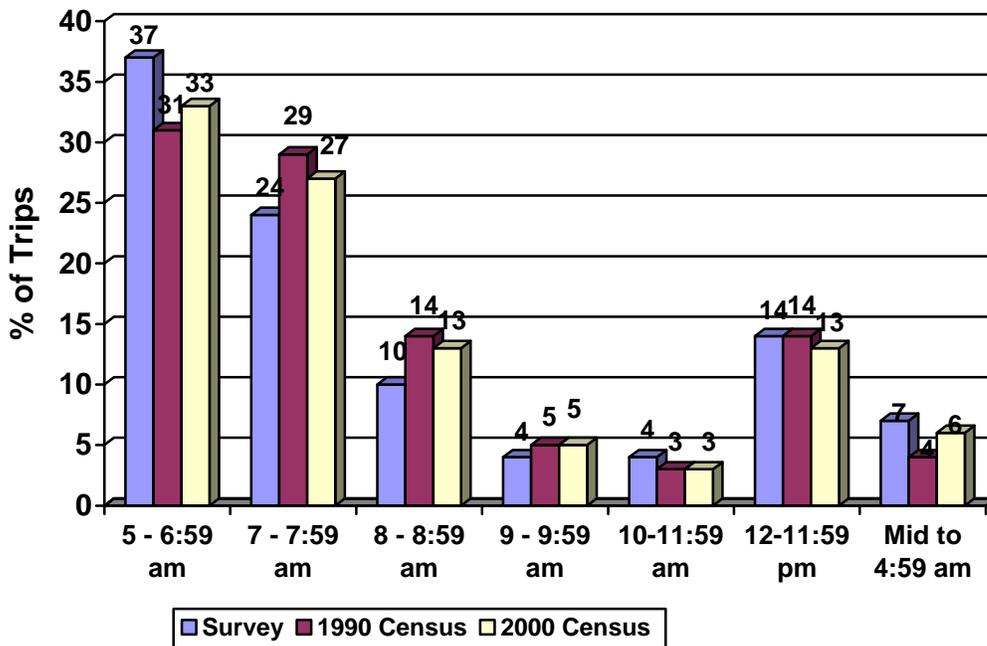
The survey respondents recorded longer commutes than what was captured by the census. This could be a result of the way the questions were asked. The MAG survey respondents recorded their specific start and end times for their home-based work trips, while the respondents to the census recorded the travel time. In addition, the MAG survey captured travel times throughout the spring and fall of 2001, while the census focused on April of 2000.

**Figure ES-7**  
**Travel Behavior Data Comparisons – Travel Time to Work**



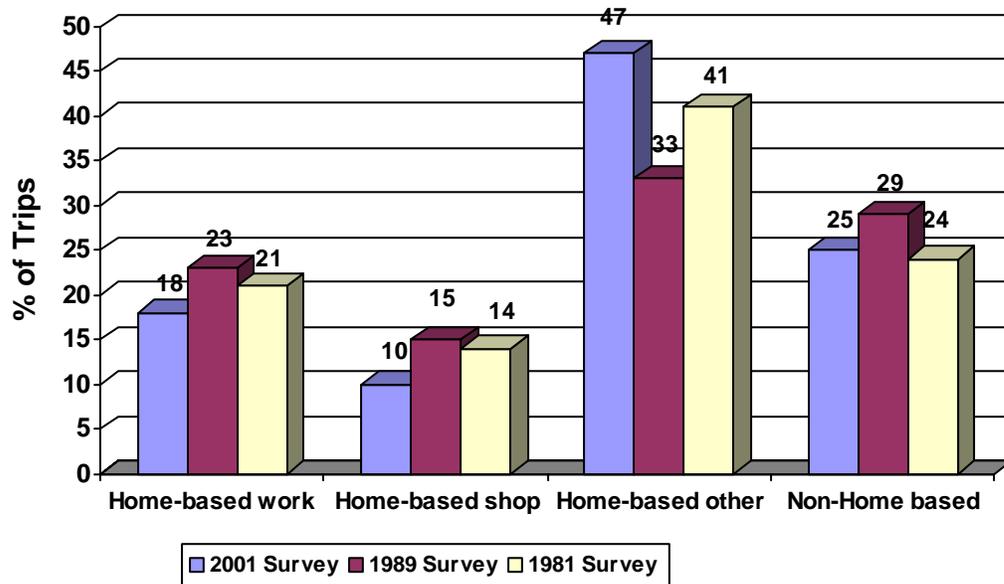
The survey respondents reported leaving slightly earlier than what was captured in the census. However, the 2001 survey data still compared favorably to the 2000 census.

**Figure ES-8**  
**Travel Behavior Data Comparisons – Departure Time from Home to Work**



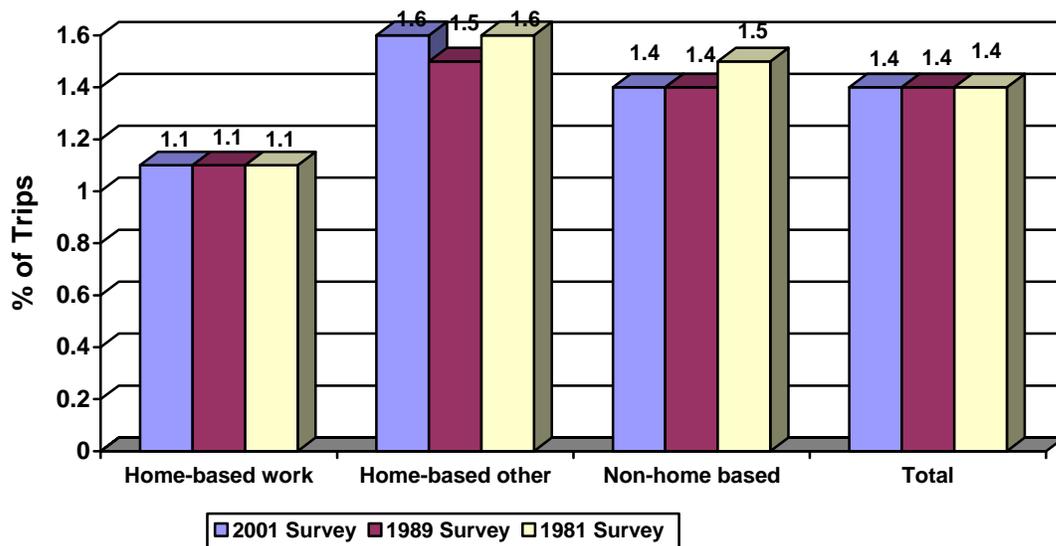
**Comparison of 2001 Survey Data to Previous Surveys.** The 2001 Maricopa Regional Household Travel Survey was the third survey conducted in Maricopa County since 1980. The others were conducted in 1981 and 1989. The purpose of this section is to present the results of the three surveys. This review is subjective only, given the differences in methodology, definitions, and other factors. The 2001 average daily household trip rate was 7.38, which is slightly lower than the 1981 rate of 7.66 and the 1989 rate of 8.38. As shown in Figure ES-9, the 2001 survey data contains a higher proportion of home-based other trips.

**Figure ES-9**  
Survey Data Comparisons – Trip Purpose



Average vehicle occupancy for auto driver trips remained fairly consistent across all studies.

**Figure ES-10**  
Survey Data Comparisons – Trip Purpose



**Conclusion:** The data set produced as a result of the Maricopa Regional Household Travel Survey represents an excellent source of regional travel behavior information for the transportation planning community. The project scope, along with careful survey design and execution, has provided a high quality data set for use in regional transportation planning and future modeling and travel forecasting efforts. As indicated by the tables and summaries presented throughout this report, the Maricopa Regional Household Travel Survey data set will serve as a solid foundation for regional model update efforts.